

Women's cancers: do variations in patterns of care explain the world-wide inequalities in survival and avoidable premature deaths?

VENUSCANCER

Claudia Allemani



Sex and Gender in Frontier Research

European Research Council (ERC) Workshop – 16 November 2020

Why, in the 21st century, does survival for women's cancers depend so heavily on where they live?

Breast, cervical and ovarian cancers

A major public health problem in Europe and world-wide

- **2.5 million women diagnosed** every year
- **900,000 deaths**, two-thirds in LMIC, one-third in HIC
- **Striking differences in 5-year survival**

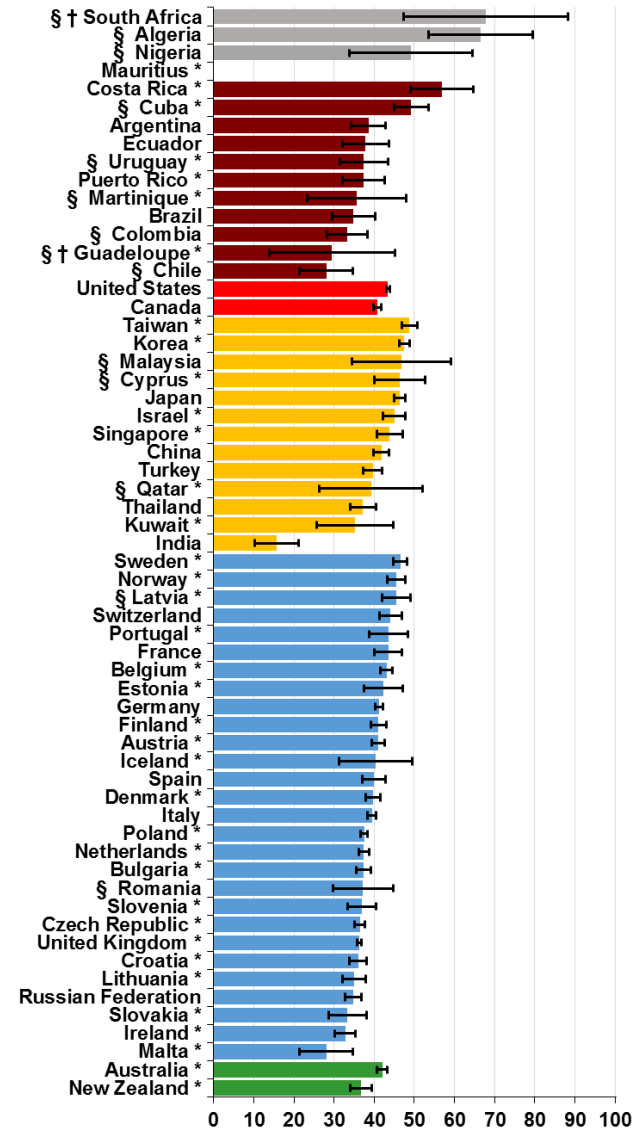
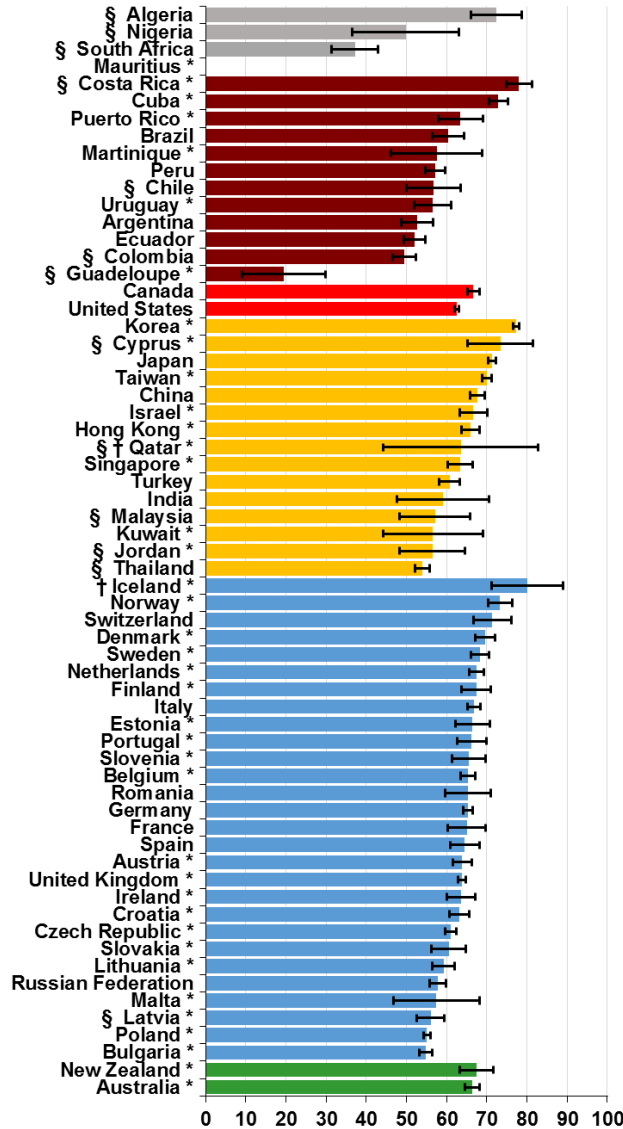
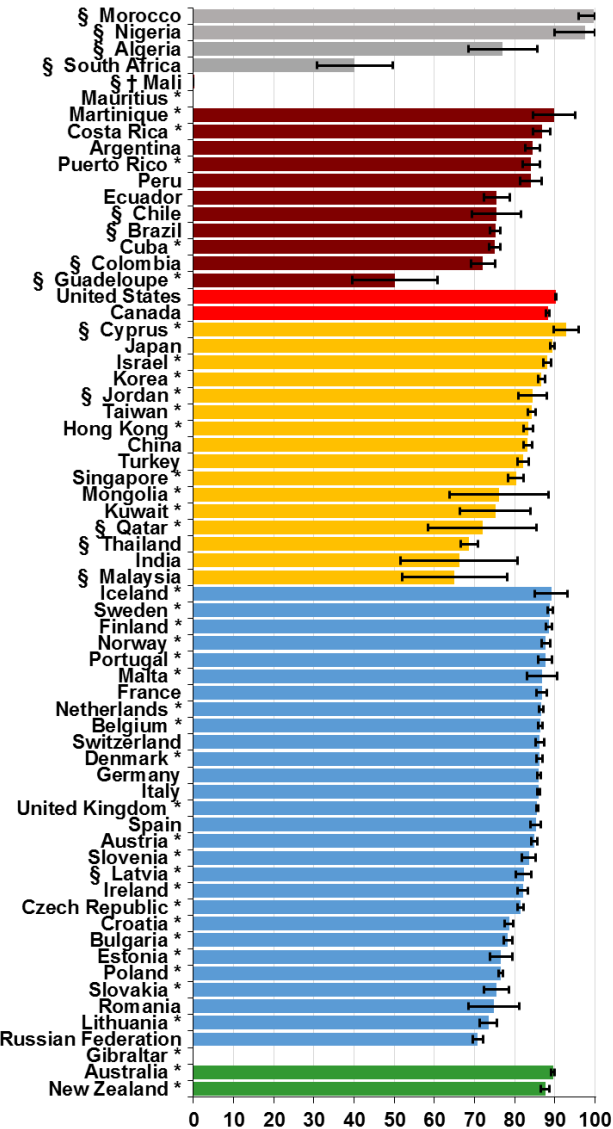


CONCORD-3: 5-year net survival (%) - 2010-2014

BREAST

CERVIX

OVARY



* 100% coverage; § = less reliable estimate; † unstandardized estimate

Health, equity, and women's cancers 1



The global burden of women's cancers: a grand challenge in global health

Ophira Ginsburg, Freddie Bray, Michel P Coleman, Verna Vanderpuye, Alexandru Eniu, S Rani Kotha, Malabika Sarker, Tran Thanh Huong, Claudia Allemani, Allison Dvaladze, Julie Gralow, Karen Yeates, Carolyn Taylor, Nandini Oomman, Suneeta Krishnan, Richard Sullivan, Dominista Kombe, Magaly M Blas, Groesbeck Parham, Natasha Kassami, Lesong Conteh

Every year, more than 2 million women worldwide are diagnosed with breast or cervical cancer, yet where a woman lives, her socioeconomic status, and agency largely determines whether she will develop one of these cancers and will ultimately survive. In regions with scarce resources, fragile or fragmented health systems, cancer contributes to the cycle of poverty. Proven and cost-effective interventions are available for both these common cancers, yet for so many women access to these is beyond reach. These inequities highlight the urgent need in low-income and middle-income countries for sustainable investments in the entire continuum of cancer control, from prevention to palliative care, and in the development of high-quality population-based cancer registries. In this first paper of the Series on health, equity, and women's cancers, we describe the burden of breast and cervical cancer, with an emphasis on global and regional trends in incidence, mortality, and survival, and the consequences, especially in socioeconomically disadvantaged women in different settings.

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THE LANCET

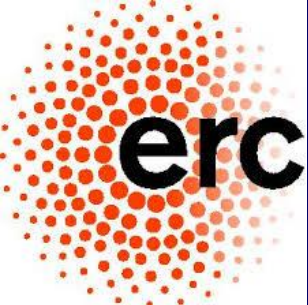
Health, equity, and women's cancers



"Worldwide, almost two-thirds of women who die from breast cancer and most who die from cervical cancer live in low-income and middle-income countries. This situation is a largely preventable tragedy for hundreds of thousands of women and their families every year."

A Series by The Lancet

Lancet 2017; 389: 847-860



Aims

Breast, cervical and ovarian cancers

AIM 1 – “High-resolution” studies

- To explain the wide international survival differences
- To describe patterns of care in HIC and LMIC
- To monitor adherence to treatment guidelines

AIM 2 – Avoidable premature deaths

- To estimate numbers *between* countries, by GDP, TNEH
- To estimate numbers *within* a country, by race and socio-economic status
- To monitor trends from 1995 to 2014





Data

Breast, cervical and ovarian cancers

“High-resolution” studies

- **215,000 women** diagnosed **2010-14** (1 year of incidence)
- Collect new data from medical records:
Stage, biomarkers, treatment ...
- **Recruit at least 2 countries per continent**

Avoidable premature deaths

- **10 million women** diagnosed **1995-2014** in 60+ countries
- Net survival by country, age and calendar period





Methods

“High-resolution” studies

- Distribution by country and registry of:
Stage at diagnosis, biomarkers, molecular sub-type (breast), histological type (ovary), treatment ...
- Excess risk of death from cancer at 1 and 5 years
- Odds of receiving *guideline-compliant* treatment

Avoidable premature deaths

- 5-year net survival by country, age, calendar period
- GDP, TNEH (OECD data base)





VENUSCANCER

- **CONCORD Working Group - Arequipa Nov 2018**
- **Online questionnaire - February 2019**
- **VENUSCANCER meeting – Vancouver June 2019**
- **Protocol – finalised in November 2019**
- **Call for data – December 2019 – June 2020 ...**
- **Data quality control - ongoing**
- **Training**
- **Support for 10 cancer registries in LMIC**

Online questionnaires



VENUSCANCER – BREAST

Questionnaire on the availability of data from your cancer registry

Country: _____
 Registry: _____
 Reference person: _____
 Email: _____

We would like to know *if you collect data* on a range of variables for **cancer**. If you do collect data on some or all of the variables listed below, we ask you to provide an approximate range for the **completeness** of that variable.

1. If the data call is issued in **March or April 2019**, what would be the most recent year for which cancer registration is considered to be complete, and for which the registry would have data on some or all of the variables discussed below, covering stage at diagnosis, staging procedures, molecular biomarkers, treatment, follow-up, recurrence, socio-economic status, family history and lifestyle, for **women registered with breast cancer**?

2. Do you assign a unique code to each person registered with a cancer?
 If yes, approximate completeness
 Less than 25% [] 25-49% []

3. Do you assign a unique code to each tumour registration?
 If yes, approximate completeness
 Less than 25% [] 25-49% []

VENUSCANCER –

Questionnaire on the availability of data from your cancer registry

Country: _____
 Registry: _____
 Reference person: _____
 Email: _____

We would like to know *if you collect data* on a range of variables for **cancer**. If you do collect data on some or all of the variables listed below, we ask you to provide an approximate range for the **completeness** of that variable in your data.

1. If the data call is issued in **March or April 2019** for which cancer registration is considered to be complete, and for which the registry would have data on some or all of the variables discussed below, covering stage at diagnosis, staging procedures, mole up, recurrence, socio-economic status, family history and lifestyle, for **women registered with cervical cancer**?

2. Do you assign a unique code to each person registered with a cancer?
 If yes, approximate completeness
 Less than 25% []

3. Do you assign a unique code to each tumour registration?
 If yes, approximate completeness
 Less than 25% []

VENUSCANCER – OVARY

31 January 2019

Questionnaire on the availability of data from your cancer registry

Country: _____
 Registry: _____
 Reference person: _____
 Email: _____

We would like to know *if you collect data* on a range of variables for women with **ovarian cancer**. If you do collect data on some or all of the variables listed below, we ask you to provide an approximate range for the **completeness** of that variable in your data.

1. If the data call is issued in **March or April 2019**, what would be the most recent year for which cancer registration is considered to be complete, and for which the registry would have data on some or all of the variables discussed below, covering stage at diagnosis, staging procedures, molecular biomarkers, treatment, follow-up, recurrence, socio-economic status, family history and lifestyle, for **women registered with ovarian cancer**?

2012 []
 2013 []
 2014 []
 2015 []
 2016 []
 2017 []

2. Do you assign a unique code to each person registered with a cancer?
 If yes, approximate completeness
 Less than 25% [] 25-49% [] 50-74% [] 75-100% []
 Yes []
 No []

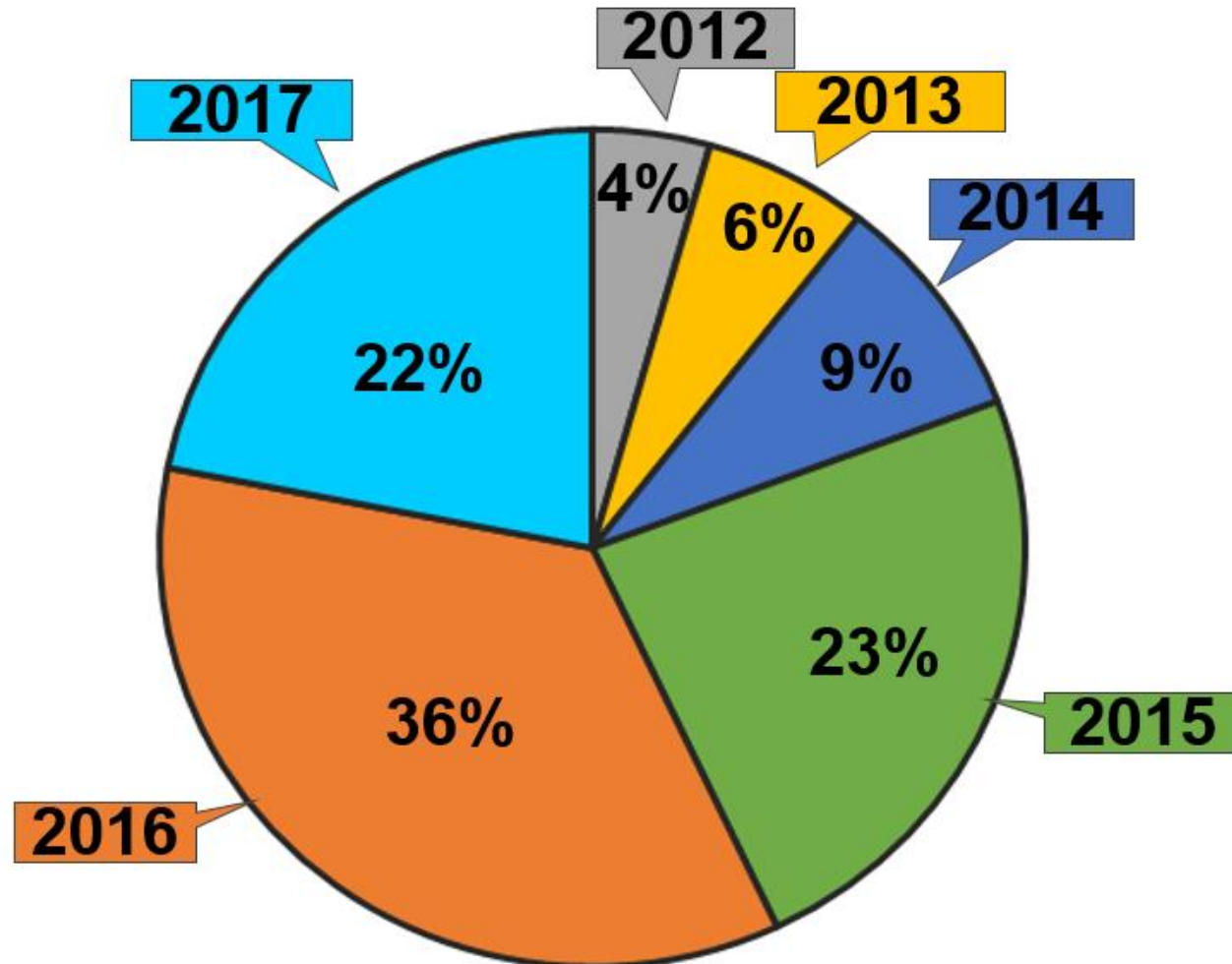
3. Do you assign a unique code to each tumour registration?
 If yes, approximate completeness
 Less than 25% [] 25-49% [] 50-74% [] 75-100% []
 Yes []
 No []

Countries and registries

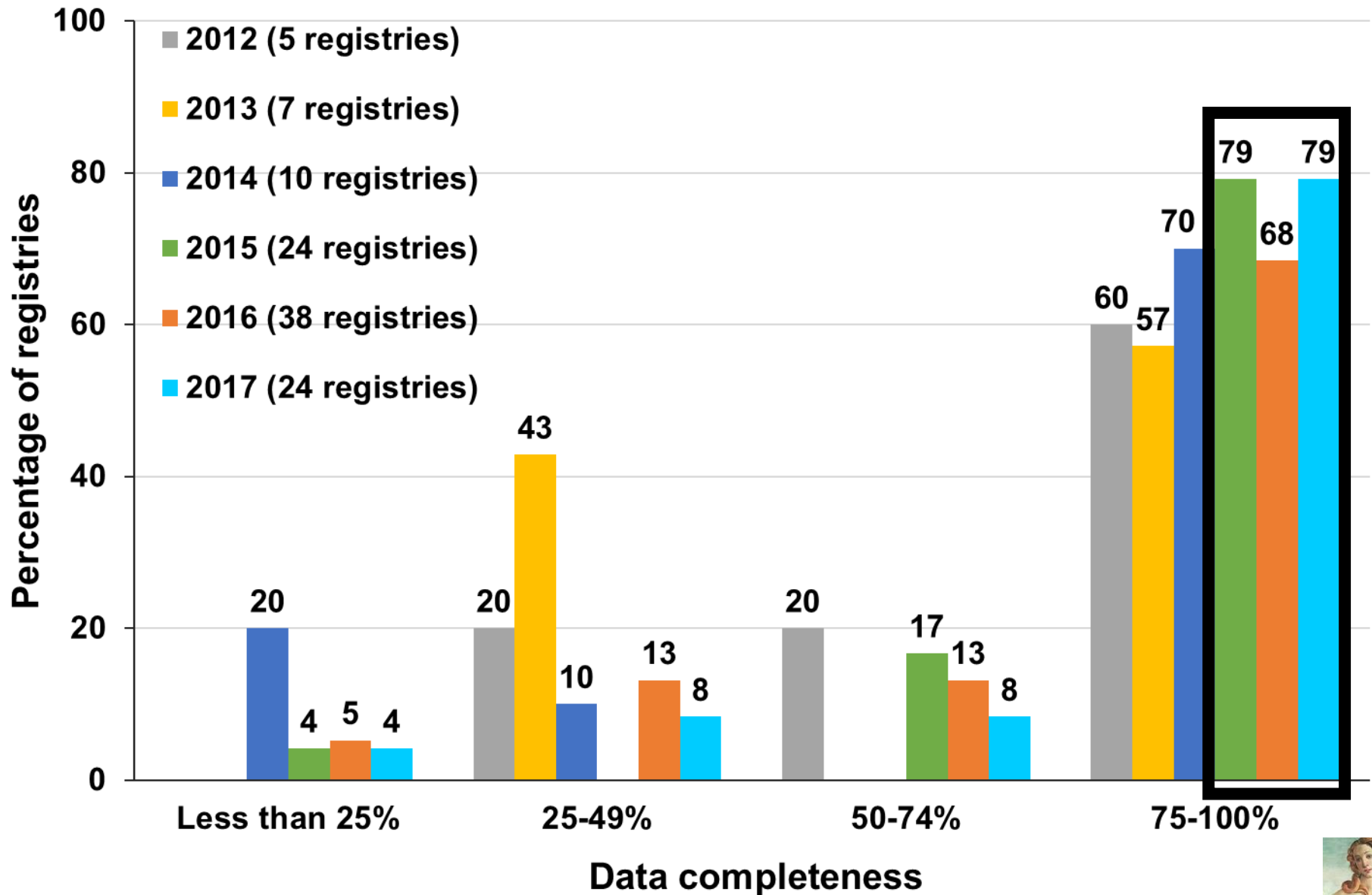
	Countries	Registries
Africa	2	2
America (Central and South)	8	15
America (North)	2	18
Asia	9	18
Europe	19	57
Oceania	1	4
Total	41	114



Breast – preferred year of diagnosis 114 registries



Stage availability, by year of diagnosis

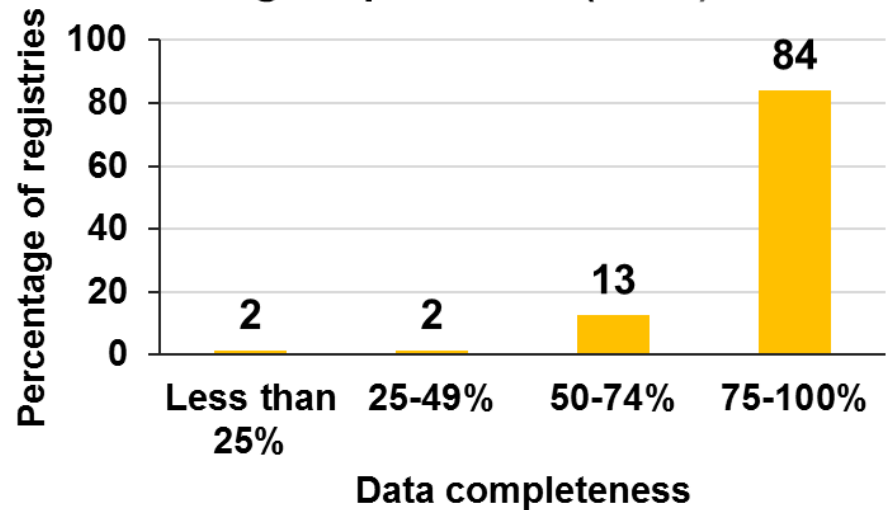


Treatment data: 2012-2017

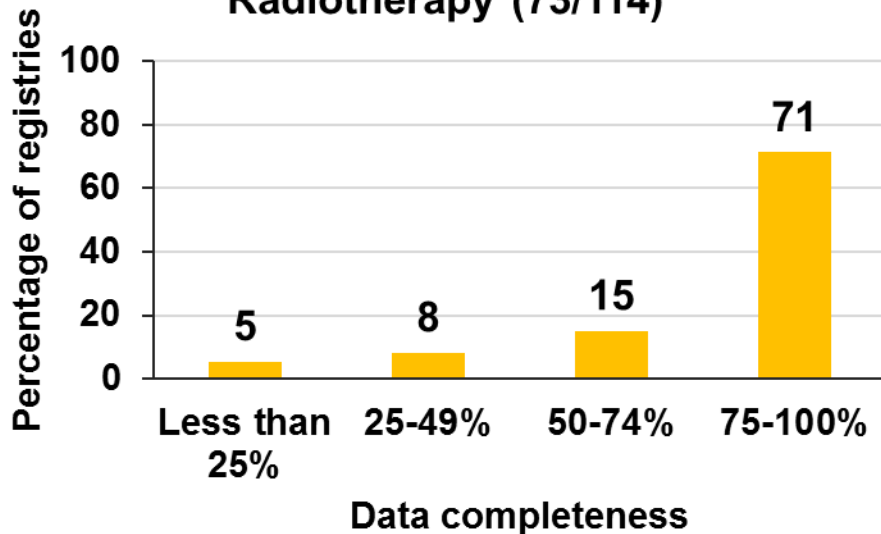
Surgery (81/114)



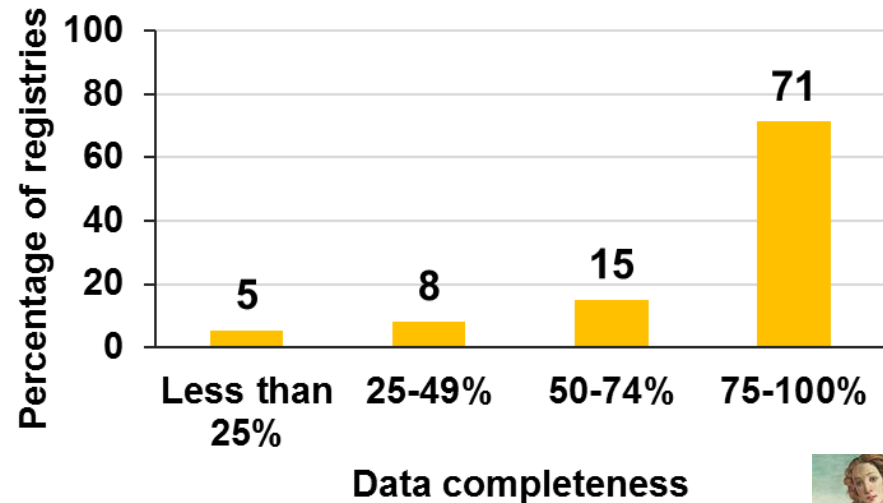
Surgical procedure (63/81)



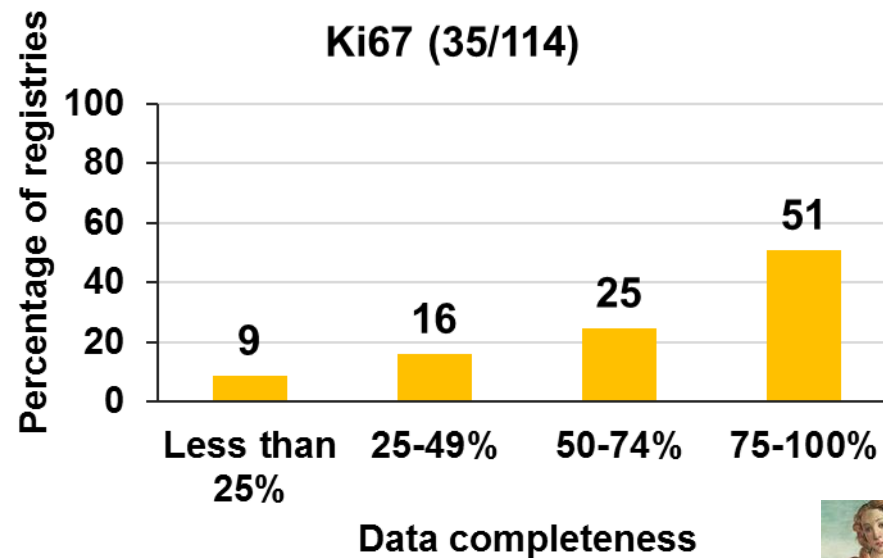
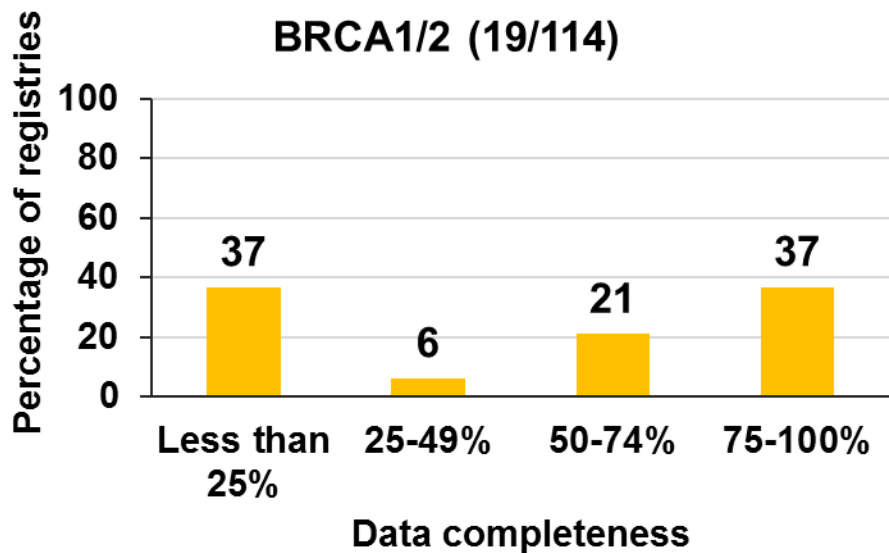
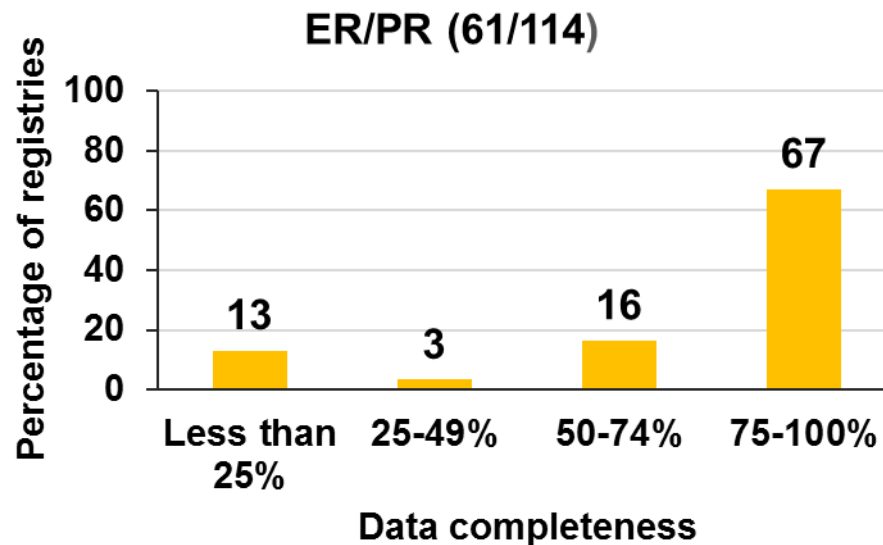
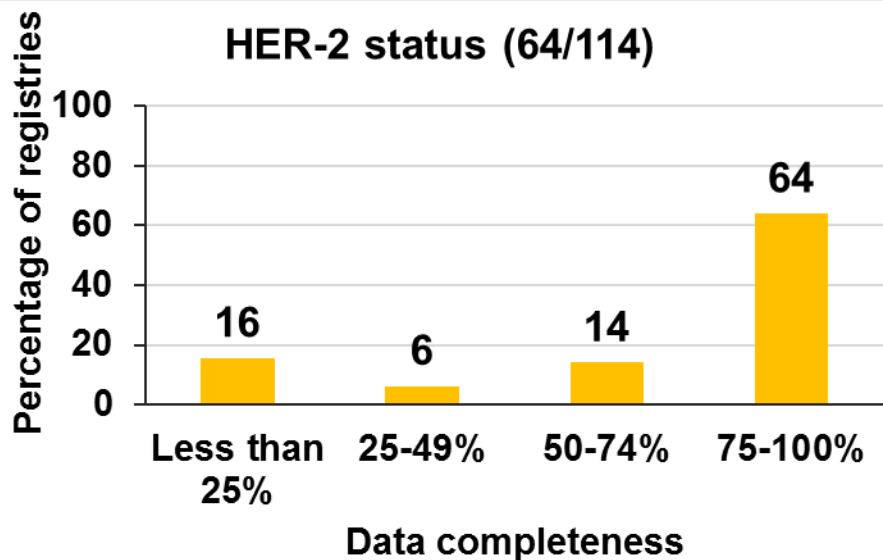
Radiotherapy (73/114)



Chemotherapy (73/114)



Molecular biomarkers



Discussion

- **Great enthusiasm!**
- **Over 100 registries for each cancer**
- **Complete incidence 2015-2017 in over 90 registries**
- **Completeness**
 - ✓ **High for stage, staging procedures and treatment**
 - ✓ **Moderate for molecular biomarkers**
 - ✓ **Low for comorbidities and SES**
- **Willingness to improve completeness**



Expected results - contribution to public health

- **Big data: largest population-based database in the world with detailed biological, clinical and molecular data for the most common cancers in women**
- **Most recent available data on:**
 - ✓ **disease biology**
 - ✓ **patterns of care**
 - ✓ **1-year and 5-year survival**
- **Actionable evidence for health policy on inequalities**
- **Up-to-date evidence for EU guidelines on cancer control**



Innovative aspects

- **First world-wide, high-resolution study of cancer survival**
- **Cutting-edge statistical methods for population-based analyses, using the most recent data available**
- **Good evidence to explain international disparities in cancer survival for policy-makers**
- **Targeted dissemination of findings to scientists, cancer patients and general public**
- **Training for cancer registrars in LMIC**



Population-based survival, by sex

- Survival higher for women, for most cancers
- CONCORD data base – data for 15 adult cancers (15-99 years) and 3 childhood cancers (0-14 years)
- Funding to analyse world-wide survival trends, by sex

CONCORD and VENUSCANCER Working Group

Collaborators (572)

[Bouzbid S](#), [Hamdi-Chérif M](#), [Zaidi Z](#), [Meguenni K](#), [Reqaqba D](#), [Bayo S](#), [Cheick Bouqadari T](#), [Manraj SS](#), [Bendahhou K](#), [Fabowale A](#), [Bradshaw D](#), [Somdyala NIM](#), [Kumcher I](#), [Moreno F](#), [Calabrano GH](#), [Espinola SB](#), [Carballo Quintero B](#), [Fita R](#), [Diumenjo MC](#), [Laspada WD](#), [Ibañez SG](#), [Lima CA](#), [De Souza PCF](#), [Del Pino K](#), [Laporte C](#), [Curado MP](#), [de Oliveira JC](#), [Veneziano CLA](#), [Veneziano DB](#), [Latorre MRDO](#), [Tanaka LF](#), [Rebello MS](#), [Santos MO](#), [Galaz JC](#), [Aparicio Aravena M](#), [Sanhueva Monsalve J](#), [Herrmann DA](#), [Varqas S](#), [Herrera VM](#), [Uribe CJ](#), [Bravo LE](#), [Garcia LS](#), [Arias-Ortiz NE](#), [Morantes D](#), [Jurado DM](#), [Yépez Chamorro MC](#), [Delgado S](#), [Ramirez M](#), [Galán Alvarez YH](#), [Torres P](#), [Martínez-Reyes F](#), [Jaramillo L](#), [Quinto R](#), [Castillo J](#), [Mendoza M](#), [Cueva P](#), [Yépez JG](#), [Bhakkan B](#), [Deloumeaux J](#), [Joachim C](#), [Macni J](#), [Carrillo R](#), [Shalkow Klincovstein J](#), [Rivera Gomez R](#), [Poguioma E](#), [Tortolero-Luna G](#), [Zavala D](#), [Alonso R](#), [Barrios E](#), [Eckstrand A](#), [Nikiforuk C](#), [Noonan G](#), [Turner D](#), [Kumar E](#), [Zhang B](#), [McCrate FR](#), [Ryan S](#), [MacIntyre M](#), [Saint-Jacques N](#), [Nishri DE](#), [McClure CA](#), [Vriends KA](#), [Kozie S](#), [Stuart-Panko H](#), [Freeman T](#), [George JT](#), [Brockhouse JT](#), [O'Brien DK](#), [Holt A](#), [Almon L](#), [Kwong S](#), [Morris C](#), [Rycroft R](#), [Mueller L](#), [Phillips CE](#), [Brown H](#), [Cromartie B](#), [Schwartz AG](#), [Vigneau F](#), [Levin GM](#), [Wohler B](#), [Bayakly R](#), [Ward KC](#), [Gomez SL](#), [McKinley M](#), [Cress R](#), [Green MD](#), [Miyagi K](#), [Ruppert LP](#), [Lynch CF](#), [Huang B](#), [Tucker TC](#), [Deapen D](#), [Liu L](#), [Hsieh MC](#), [Wu XC](#), [Schwenn M](#), [Gershman 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[Guizard AV](#), [Bouvier V](#), [Launoy G](#), [Arveux P](#), [Maynadié M](#), [Mounier M](#), [Woronoff AS](#), [Daoulas M](#), [Robaszkievicz M](#), [Clavel J](#), [Goujon S](#), [Lacour B](#), [Baldi I](#), [Pouchieu C](#), [Amadeo B](#), [Courreau G](#), [Orazio S](#), [Preux PM](#), [Rharbaoui F](#), [Marrer E](#), [Trétarre B](#), [Colonna M](#), [Delafosse P](#), [Ligier K](#), [Plouvier S](#), [Cowplli-Bony A](#), [Molinié F](#), [Bara S](#), [Ganry O](#), [Lapôtre-Ledoux B](#), [Grosclaude P](#), [Bossard N](#), [Uhry Z](#), [Bray F](#), [Piñeros M](#), [Stabenow R](#), [Wilsdorf-Köhler H](#), [Eberle A](#), [Luttmann S](#), [Löhden I](#), [Nennecke AL](#), [Kieschke J](#), [Sirri E](#), [Emrich K](#), [Zeissig SR](#), [Holleczek B](#), [Eisemann N](#), [Katalinic A](#), [Asquez RA](#), [Kumar V](#), [Petridou E](#), [Ólafsdóttir EJ](#), [Tryggvadóttir L](#), [Clough-Gorr K](#), [Walsh PM](#), [Sundseth H](#), [Mazzoleni G](#), [Vittadello F](#), [Coviello E](#), [Cuccaro 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